
COVID-19 MATTERS

A REVIEW OF THE IMPACT OF
COVID-19 ON THE LUNG CANCER
PATHWAY AND OPPORTUNITIES
FOR INNOVATION EMERGING
FROM THE HEALTH SYSTEM
RESPONSE TO THE PANDEMIC



UNITED KINGDOM
LUNG CANCER COALITION

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ABOUT THE UKLCC

The United Kingdom Lung Cancer Coalition (UKLCC) – the country's largest multi-interest group in lung cancer – is a coalition of the UK's leading lung cancer experts, senior NHS professionals, charities and healthcare companies.

Through our campaigning activity we aim to:

- Raise political awareness of lung cancer
- Raise the general public's awareness of lung cancer – and especially encourage earlier presentation and symptom recognition
- Empower patients to take an active part in their care
- Improve lung cancer services

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The UKLCC is keen to work with all interested organisations and bodies to improve the quality and outcomes of lung cancer treatment and care.

For more information about our work and our partners, please visit our website or contact our secretariat.

www.uklcc.org.uk

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FOREWORD

Whilst the overall outcomes for lung cancer across the world remain poor compared to many other cancers, and survival of patients in the UK has consistently been shown to be worse than in many other countries, the care and outcomes for lung cancer patients in the UK have been steadily improving over the last 15-20 years.

The UKLCC has been consistently pushing for a range of efforts to achieve a 5-year survival rate of 25% by 2025¹ – a target that the expert community, which it represents, felt is entirely achievable.

Felt, that is, before the catastrophe that is the Covid-19 pandemic. Covid-19 has clearly affected every aspect of our lives and our health care systems, so to that extent lung cancer is just one amongst many issues to be faced as a result. This report, based on a combination of the outcome of a meeting of the UKLCC's Clinical Advisory Group, interviews with a wide range of experts in the field and desk-top research, tries to identify not only the adverse impact of the pandemic on lung cancer care and outcomes, but changes in practice from which we can learn and potentially adopt and adapt to improve care in the future.

We have no doubt that the survival and quality of life of lung cancer patients will have been seriously and adversely affected by changes in how cancer care has been delivered as a result of Covid-19. But we also know that there was much room for improvement before the pandemic began. We would urge all those in whose hands the quality of care of lung cancer patients rests, be it clinicians, managers or policy makers, to reflect on the issues and actions outlined in this report and do all they can to ensure that we recover the momentum that had been building in the lung cancer community and work towards not a 'New Normal' but a 'New Super-normal' for the lung cancer patients who look to us for their care.

Professor Mick Peake
Outgoing Chair,
Clinical Advisory Group, UKLCC

Dr Robert Rintoul
Incoming Chair,
Clinical Advisory Group, UKLCC

Martin Grange
Chair, UKLCC



EFFORTS TO ACHIEVE A 5-YEAR SURVIVAL RATE OF 25% BY 2025¹

METHODOLOGY

The development of this report was informed by comprehensive desk research and literature review of key statements and publications, including written stakeholder submissions to the Health Select Committee inquiry on Delivering Core NHS and Care Services during the Pandemic and Beyond. It is based on the discussion of the UKLCC's Clinical Advisory Group, which focussed on the impact of the pandemic on lung cancer services across the country during its meeting on 26 June 2020. A series of interviews with lung cancer experts was subsequently carried out to complement the insights that emerged from the Clinical Advisory Group discussion and this report represents the collective views from these two sources. We would like to thank the following experts who took part in the interviews:

Jenny Abbott, Co-Chair, EGFR Positive UK
Professor David Baldwin, Hon Professor of Respiratory Medicine, Consultant Respiratory Physician, University of Nottingham

Karen Clayton, Vice-Chair, Lung Cancer Nursing UK

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The interviews were carried out from July to September 2020.



¹A list of the attendees of the UKLCC's Clinical Advisory Group meeting can be found in the Annex.

SUMMARY OF RECOMMENDATIONS

These recommendations are ordered based on the organisations, bodies or governments they are directed to. The recommendations are numbered as they appear in the report.

Recommendations for national NHS bodies

1

Where they are operational, lung cancer screening programmes should be supported to resume at the earliest opportunity. As well as directly benefiting patients, this will enable the development of the necessary evidence base to support the wider roll-out of a national screening programme across all four of the devolved nations.

3

Isolation and visiting restrictions in hospital and palliative care settings need to be reviewed urgently to enable critically ill patients to see their families during the final phase of their lives.

7

In England, Integrated Care Systems (ICSs) should be provided with the necessary funding to establish Community Diagnostic Hubs to reduce the risk of COVID-19 transmission and accelerate diagnostic turnaround time for lung cancer patients.

The devolved nations should explore the potential for delivering diagnostic services in more community settings.

9

Every NHS Trust should be provided with the necessary IT infrastructure to enable specialists to contribute effectively to virtual meetings and ensure a high-quality discussion.

11

The NHS should work with the relevant national Health Technology Assessment bodies to assess the impact that the changes in treatment and delivery schedule have had on lung cancer patients to harness the potential improvements to patient survival outcomes as well as to their quality of life.

Recommendations for national governments

2

Targeted 'Be Clear on Lung Cancer and COVID-19' campaigns should be launched to increase awareness of potential lung cancer symptoms and increase the public's confidence across the UK in engaging with the healthcare system early.

4

Within its 2020 Spending Review, the Government should recognise the level of revenue and capital funding required to implement the recommendations of the review of diagnostic and workforce capacity of cancer services across the country, led by Professor Sir Mike Richards. The devolved administrations should take similar steps to ensure adequate funding of diagnostic infrastructure and workforce.²

5

The lung cancer clinical community should work together to promote the coherent adoption and implementation of national optimal lung cancer guidelines across the UK to ensure people affected by lung cancer receive optimal care no matter where they live.

10

To unlock the opportunities offered by the adoption of the remote consultations, research should be undertaken across the lung cancer patient and clinical community to develop best practice guidance to support lung cancer services in optimising the use of remote consultations.

Recommendations for the Lung Cancer Clinical Expert Group

6

The Lung Cancer Clinical Expert Group should develop the evidence base to allow NICE to assess 'straight to CT' referral by GPs in order to support pathway changes in all four nations.

8

The Lung Cancer Clinical Expert Group should work with the lung cancer clinical community across the UK to review the evidence base for the routine commissioning of liquid biopsy for patients with advanced disease with a high probability of an abnormal gene in their tumour.

1. INTRODUCTION

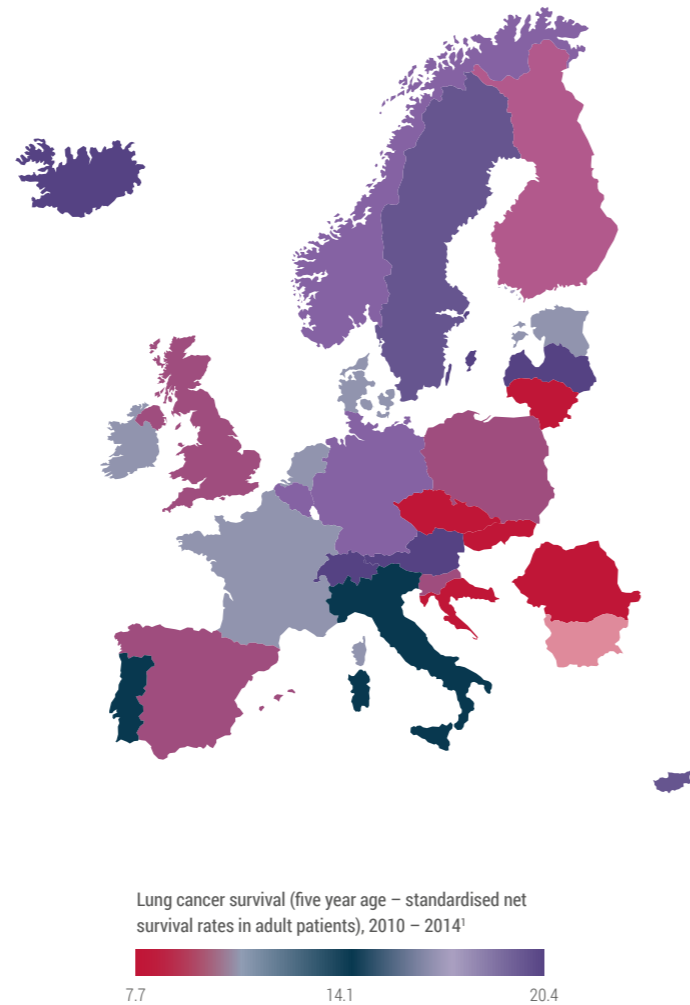


“The impact of the pandemic has seen a sharp increase in late stage diagnoses, leading to concerns that 2020 data will show a significant deterioration of lung cancer outcomes, reversing the positive trend of the past five to ten years.”

Interview with Lorraine Dallas,
Roy Castle Lung Cancer Foundation

Lung cancer is the leading cause of cancer death in the UK. Approximately 35,000 people die each year due to the condition which is more than breast and bowel cancer combined.³ In 2017, England had approximately 28,000 lung cancer deaths, Scotland 4,000, Wales 1,800 and Northern Ireland 1,000.⁴ Whilst outcomes for those affected have improved over the past decade, the UK’s lung cancer survival rates continue to lag behind that of other European countries (Figure 1).⁵

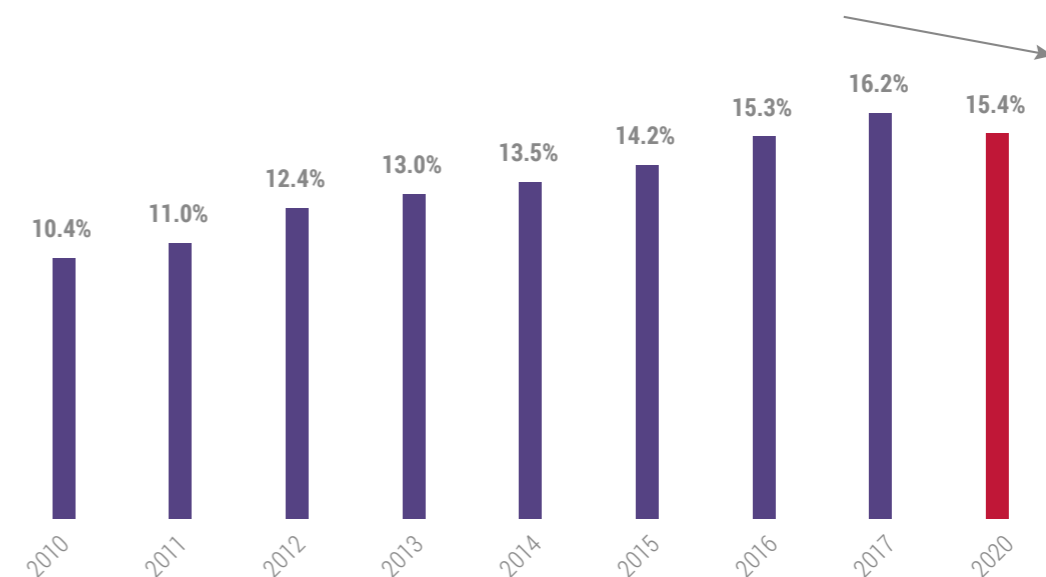
Timely detection and diagnosis and associated patient access to care and treatment has been identified as key for improving outcomes for those affected.⁶ Recent years have seen unprecedented collaboration across the lung cancer community to accelerate the diagnostic pathway through the implementation of the National Optimal Lung Cancer Pathway (NOLCP), which aims to reduce the time from first referral to treatment decision from 62 to 49 days.⁷ The optimisation of the lung cancer care pathway, together with the roll-out of public awareness campaigns and the lung cancer CT screening pilots offer promising potential to improve outcomes for patients longer term.⁸



Increased mortality – It is estimated that the impact of the COVID-19 pandemic could lead to an additional 1,372 deaths due to lung cancer, reversing the progress achieved in lung cancer over recent years.ⁱⁱ

However, the emergence of the COVID-19 pandemic in early 2020 has put this progress into question. Due to the similarity of symptoms and pressure put on respiratory services, the lung cancer patient community is particularly impacted by the pandemic. It is estimated that in England delays in diagnosis due to COVID-19 could result in an additional 1,372 lung cancer deaths five years following diagnosis, reversing the progress in lung cancer survival achieved over recent years (Figure 2).⁹

Figure 2: Models show that the impact of COVID-19 in England could lead to a decrease in lung cancer five-year survival longer termⁱⁱⁱ



To prevent this worrying trend, it is important to understand how lung cancer services need to be supported to ensure they can continue to provide high quality care for lung cancer patients under the additional pressures caused by the pandemic. This report analyses the impact of COVID-19 on lung cancer care pathways as well as the opportunities for innovation emerging from the health system response to the pandemic. Harnessing these opportunities will be crucial to ensuring that the UK does not divert from its important trajectory towards achieving 25% five-year lung cancer survival rate by 2025.¹⁰

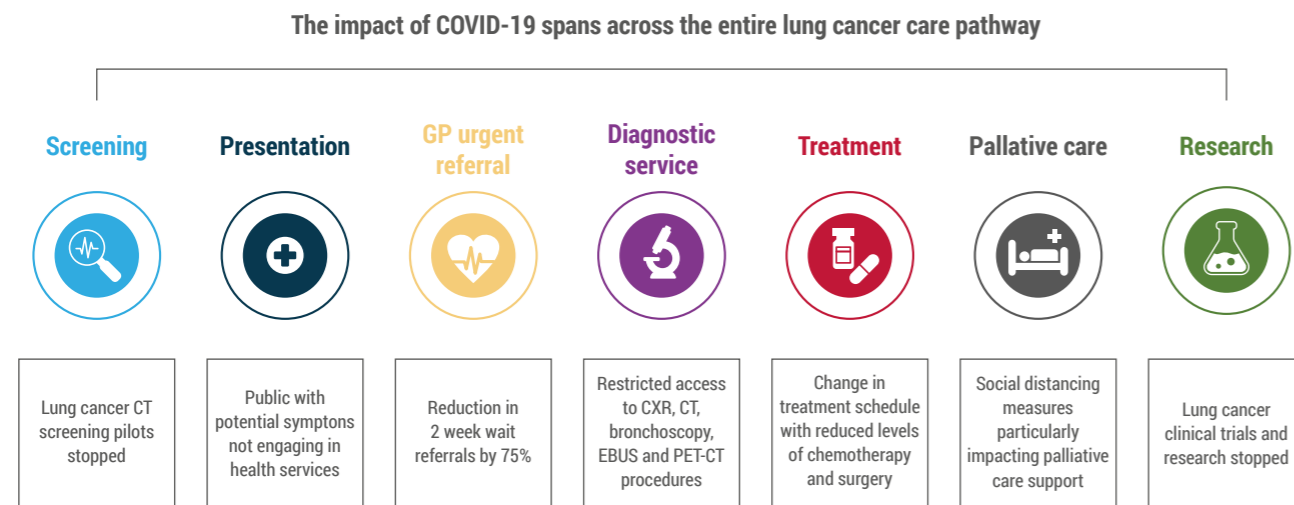
2. THE IMPACT OF THE COVID-19 PANDEMIC ON THE LUNG CANCER CARE PATHWAY



“There is a specific problem for lung cancer, which is the overlap of symptoms with COVID-19. Some patients may develop cough symptoms and be told to stay at home until their symptoms get worse. This has resulted in an increase in late stage presentations.”

Interview with Professor Sir Mike Richards,
former National Cancer Director

The COVID-19 pandemic is posing unprecedented challenges to the healthcare system and its impact is felt across the entire lung cancer care pathway, from presentation to diagnosis and access to treatment:



1.1. SCREENING AND EARLY DETECTION

Early detection at stages I or II offers the best chance of cure and mortality reduction for patients with lung cancer. Yet, even before the impact of COVID-19 75% of people present with advanced disease when the cancer has already spread.¹¹ To increase the rate of lung cancers detected at an early stage, NHS England announced in 2019 the roll-out of 14 lung cancer CT-scanning screening pilots for a targeted at-risk population as part of the implementation of the commitments set out in the Long Term Plan.¹²

Figure 3: Proportion of cases diagnosed at each stage, 2014^{iv}

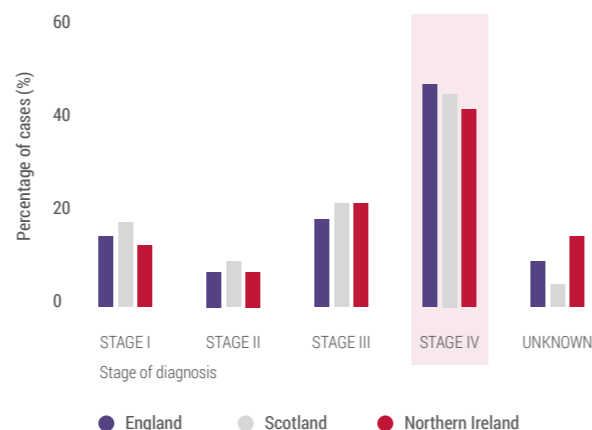


Figure 4: Lung cancer screening pilot sites^v



England is one of the countries in Europe most advanced in implementing a systematic lung cancer screening programme. Yet, not all 14 pilot sites are fully funded, and as a result of the pandemic, the programme has been stopped altogether, raising concerns over the future of the programme. NHS England & Improvement recognised the importance of lung screening, telling Cancer Alliances delivering the programmes to restart them during the NHS's 'third phase' of COVID-19 recovery.¹³ With research showing that the screening programme could lead to a reduction in lung cancer mortality of up to 26% within the identified risk group,¹⁴ it is vital that the programme resumes at the earliest opportunity.

In Scotland, the Cross Party Group for Cancer, have acknowledged the need to consider a formal recommendation on early lung cancer screening in Scotland. The Group committed to request the Scottish Government urgently consider a screening programme in Scotland for those at risk of developing lung cancer,¹⁵ following the publication of the Early detection of Cancer of the Lung Scotland (ECLS) study.¹⁶ The study of 12,000 people in Scotland used a blood test in conjunction with CT scanning to detect lung cancer early.

In Wales, a year-long scoping review was undertaken in February 2019 to explore the potential for Lung Health Checks in Wales, with the aim of producing a report by Summer 2020. The focus of the scoping paper is to establish the potential for improving lung cancer outcomes in Wales and propose potential service model options.¹⁷

In Northern Ireland, discussions to implement lung cancer screening appear to be less developed.

RECOMMENDATIONS



1

Where they are operational, lung cancer screening programmes should be supported to resume at the earliest opportunity. As well as directly benefiting patients, this will enable the development of the necessary evidence base to support the wider roll-out of a national screening programme across all four of the devolved nations.

Lung cancer patients are at a particular risk of contracting viral infections like COVID-19 both because of their underlying condition and the immunosuppression associated with many lung cancer treatments. In addition, the similarity of the presentations means that people with potential symptoms such as a persistent cough are told to stay at home for fear that they have COVID-19, contradicting existing lung cancer awareness campaigns.¹⁸ This conflicting messaging, combined with the public's reticence to engage with the healthcare system during the pandemic, has resulted in an increase in the number of people presenting late with lung cancer.¹⁹ This delay is further exacerbated in primary care with GPs likely to misdiagnose early lung cancer symptoms as COVID-19 because of the large number of COVID-19 cases.²⁰

To better support primary care services, the Lung Cancer Clinical Expert Group (CEG) developed guidance on **Differentiating the Cs**, which is designed to provide GPs with a simple triage mechanism to better differentiate potential lung cancer symptoms from those caused by COVID-19.²¹



“At least a third of patients with lung cancer have already died since the beginning of the pandemic. Some deaths will not have been recognised as lung cancer and may have even been labelled as Covid-19”

Professor David Baldwin, Hon Professor Respiratory Medicine Consultant Respiratory Physician,
University of Nottingham

RECOMMENDATIONS



2

Targeted 'Be Clear on Lung Cancer and COVID-19' campaigns should be launched to increase awareness of potential lung cancer symptoms and increase the public's confidence across the UK in engaging with the healthcare system early.

2.2. THE DIAGNOSTIC PATHWAY



"The disruption of services has meant that some of our members had their scans delayed by over three months. By the time the scan was rescheduled, the cancer had progressed to a stage when it was no longer treatable as planned."

Interview with Jenny Abbott,
EGFR Positive UK

In addition to the reluctance of the public to engage with healthcare services, delays in the diagnostic pathway are further contributing to the increase in the number of late stage presentations.²² Access to diagnostic services has been restricted due to the additional capacity pressures created by the number of COVID-19 diagnoses as well as attempts to reduce the risk of introducing the virus into 'COVID-19 cold' hospital settings. As discussed at the UKLCC's Clinical Advisory Group meeting, some services have reported an up to 75% reduction in two-week wait referrals, resulting in an increasing backlog of outpatient appointments.²³

Diagnostic procedures such as fiberoptic bronchoscopy and endobronchial ultrasound (EBUS) have been particularly impacted due to their aerosol generation, and therefore COVID-19 infection risk.²⁴ Access to CT and PET-CT scanning has been reduced with already scheduled patient appointments placed on hold for the three months for the initial phase of the pandemic, leading to widescale breaches of the six-week wait target from referral to scan as a consequence.²⁵



Reduction in referral

Reluctance of the public to engage in health services, and restricted access to diagnostics to reduce the potential introduction of the virus in 'COVID-cold sites', reduction of two-week referral of up to 75% in some areas during the first wave of the pandemic.^{vi}

Opinions expressed at the Clinical Advisory Group discussion

Delays of only a few months can have significant implications for the chances of a patient to receive a potentially curative treatment. The performance status of the patient i.e. the fitness of a person affected by lung cancer to undergo potentially curative treatment, such as surgery, can rapidly decline in the time between the diagnosis first being made and the treatment. The faster a clinical team can make a decision on the appropriate course of treatment, the better for the patients' prognosis.²⁶ With studies showing a 16% increase in mortality if the time from diagnosis to surgery is more than 40 days, a delay of three months or more can mean the progression from a potentially curative tumour towards one that is only suitable for palliative care.²⁷

2.3. ACCESS TO TREATMENT



"The service has seen a high number of emergency presentations, including the need for eight airway stents over the past few weeks – a number usually seen over a period of six months."

Dr Neal Navani,
University College Hospital, during the UKLCC's CAG meeting

66% of patients with good performance status (PS) and advanced non-small cell lung cancer received systemic anticancer treatment in 2018. These treatments include chemotherapies.²⁸ However, due to its immunosuppressant impact and its potential side effect profile, chemotherapy was largely stopped over the months of the initial wave of the pandemic and the treatment schedule changed.²⁹

The UKLCC's Clinical Advisory Group discussion noted that surgery – a potential curative treatment option for lung cancer – was also reduced due to intensive care bed capacity pressures. They also noted the increased mortality if the patient contracted COVID-19 following surgery, rising up to 40-50%.³⁰ With radical radiotherapy presenting a potential alternative treatment option to surgery, NHS England announced the acceleration of the roll-out of stereotactic ablative radiotherapy (SABR) in June 2020.³¹



Reduced access to lung cancer surgery

Levels of lung cancer surgery reduced during the initial phase of the pandemic further impacting on England's relatively low lung cancer surgical rates when compared to other European countries.^{vii}

2.4. PATIENT SUPPORT AND PALLIATIVE CARE



"During the first few weeks of lockdown, we saw our helpline and online service pretty much double in volume of contact by patients and family members concerned about changes and delays to their treatment."

Interview with Lorraine Dallas,
Roy Castle Lung Cancer Foundation

Facing a lung cancer diagnosis amidst a global respiratory pandemic poses immense emotional and psychological stress for those affected and their family members. Patient support services often provided by the third sector can help alleviate patients' concerns and provide opportunities to learn from the experiences of others. With the ability to fundraise restricted over the course of lockdown, many charities had to furlough members of their staff while

facing double or three times the demand by worried patients trying to understand the implications of the new situation for their diagnosis and treatment.

This anxiety is further exacerbated by the strict social distancing rules particularly impacting palliative care services, leaving terminally ill patients unwilling to move into the hospital setting out of fear of not being able to see their family members again.

RECOMMENDATIONS



3

Isolation and visiting restrictions in hospital and palliative care settings need to be urgently reviewed to enable critically ill patients to see their families during the final phase of their lives.

2.5. RESEARCH AND CLINICAL TRIALS



“One of our members who was enrolled in a clinical trial, was told the clinical trial was on hold at the hospital they were being treated at because the hospital had been designated a hospital for COVID patients.”

Debra Montague,
Chair, ALK Positive UK

As well as directly increasing our understanding of lung cancer and how to treat it, clinical trials provide a key route for patients to receive promising new treatment candidates early.

At the start of the first pandemic wave in March 2020, the National Institute for Health Research (NIHR) paused any new or ongoing clinical trials at NHS sites to allow COVID-19 related trials to be prioritised, as well as freeing up clinical staff to be reallocated to frontline services.³² In addition, laboratory-based medical research, which was not directly related to addressing the new virus, was not excluded from lockdown restrictions – stopping almost all non-COVID-19 related lab based research.



During the pandemic all new and ongoing lung cancer clinical trials were stopped during the initial phase of the pandemic.

The economic impact of the pandemic has also directly affected some of the key funding bodies for clinical trial research in the UK. For example, Cancer Research UK, have been forced to announce reductions to research expenditure of £150 million per year for the next three years.³³

However, the clinical trial response to COVID-19 has shown how innovative clinical trial design and regulatory approaches can enable rapid assessments of new technologies. With COVID-19 demanding regulatory urgency for new treatments and vaccines, the Medicines and Healthcare products Regulatory Agency (MHRA) published new guidance on managing clinical trials during the pandemic, resulting in an acceleration of the approval and initiation of COVID-19 related clinical trials within weeks – a process that sometimes can take months or years.³⁴ Lessons should be learnt for how clinical trial design and approval can be streamlined in the future to benefit research in other disease areas, including lung cancer.

3. SYSTEMWIDE CHALLENGES EMERGING FROM THE COVID-19 ENDEMIC PERIOD

The significant reduction in two-week referrals has allowed lung cancer services to gradually adapt to the additional capacity challenges as well as the personal protective equipment (PPE) and social distancing requirements from the pandemic. However, as referral numbers are returning to pre-COVID-19 levels, specialists across the country expressed concerns over their ability to address the considerable backlog of outpatient appointments in the context of the new restrictions. Three key challenges were highlighted in the expert interviews:



Diagnostic capacity



Turnaround times



Workforce challenges

3.1 DIAGNOSTIC CAPACITY

The pressures caused by the pandemic further exacerbated the existing diagnostic capacity challenges that lung cancer services have been facing for many years. As the UKLCC's recent Pathways Matter report notes, the UK's CT scan capacity of 8 scanners per million population is significantly lower than European average of 21.4.³⁵ The same is true for MRI scanners with 6.1 per million population compared to an EU average of 15.4.³⁶ Despite this comparatively low number of MRI scanners, the UK carries out 56.3 scans per 1,000 population, just slightly under the OECD average, indicating a high level of utilisation. This is compounded by the fact that just under a third (29%) of the UK diagnostic equipment is ten years or older with only 44% aged five years or under.³⁷ Similarly, with 78 PET-CT scanners, the UK has less than half the number of scanners available in other EU countries with similar population size, e.g. Italy has 185 PET-CT scanners.³⁸

In August 2019, the Government announced additional investment of £1 billion in capital spending,³⁹ and a month later committed £200 million to spend on MRI and CT scanners.⁴⁰ However, given the scale of the gap in diagnostic equipment and the considerable backlog of outpatient appointments, this investment is unlikely to be sufficient to provide lung service across the country with the required diagnostic capacity.

3.2 DIAGNOSTIC TURNAROUND TIMES

The introduction of additional infection control measures including the usage of PPE, preadmission testing, increased scanner cleaning, and separation of COVID-19 negative and positive patient flows, has meant that the time required per diagnostic scan has almost doubled.⁴¹ This means that patients are not only presenting late but also take longer to progress through the diagnostic pathway. As referrals are increasing, addressing the considerable backlog of outpatient appointments with half of the pre-COVID diagnostic capacity is likely to lead to considerable bottlenecks within lung cancer services.



Diagnostic capacity

With 8 CT scanners per million population, the UK is significantly below the EU average of 21.4, which is further exacerbated by the diagnostic demand created by the pandemic.



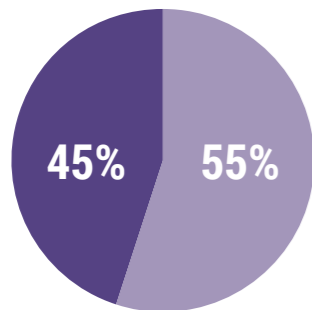
Turnaround times

The new social distancing and infection control measures have meant that the time required for diagnostic scans has almost doubled.^{viii}

3.3 THE LUNG CANCER WORKFORCE

Investment in diagnostic capacity will only lead to improvements if there are sufficient levels of staff to carry out the procedures. In 2019, the Royal College of Radiologists (RCR) estimated there was a shortfall of 1,876 radiologists, or 33% of the workforce, which is predicted to rise to 3,331 (43%) in the next five years.⁴² According to the RCR, the consultant clinical oncology workforce is short of nine whole-time equivalent (WTE) consultants (22% of the workforce) in Northern Ireland,⁴³ 11 WTE consultants (21% of the workforce) in Wales,⁴⁴ while Scotland is understaffed by 13 WTE consultants, representing 14% of the workforce.⁴⁵ Similar vacancies are reported across other specialities of the lung cancer care pathway. Increased demand from the pandemic and reduced capacity due to staff shielding and redeployment is putting further strain on an already stretched workforce.

The work of over half of the lung cancer clinical nurse specialist (LCNS) community has been directly impacted by the pressures created by COVID-19⁴⁶



● % of lung CNS or team members redeployed / unable to work
 ● % of lung CNS or team members in usual employment

55% of the LCNSs who responded to a recent survey by Lung Cancer Nursing UK worked in a team that saw at least one LCNS re-deployed or unable to work due to COVID-19.⁴⁶ This is particularly worrying given the central role that LCNSs play in guiding patients through the changes in their appointment and treatment schedule.

The recent announcement made in NHS England's People Plan for 2020/21 to provide training grants for 350 nurses to become cancer nurse specialists or chemotherapy nurses is a welcome commitment.⁴⁷ However the UKLCC's Clinical Advisory Group meeting included discussion of unpublished data, suggesting a sharp increase in the 'intention to leave rate' from 16% to 60% over the course of the pandemic, indicating the need for further support of an increasingly stretched and exhausted lung cancer workforce.⁴⁸

RECOMMENDATIONS



4

Within its 2020 Spending Review, the Government should recognise the level of revenue and capital funding required to implement the recommendations of the review of diagnostic and workforce capacity of cancer services across the country, led by Professor Sir Mike Richards.⁴⁹ The devolved administrations should take similar steps to ensure adequate funding of diagnostic infrastructure and workforce.

4. THE IMPACT OF COVID-19 ON LUNG CANCER SERVICES ACROSS THE DEVOLVED NATIONS



"We would have been in a much better position to confront the challenges presented by COVID-19 if we had national guidelines such as the NOLCP. There is clinical support but no overarching leadership to drive the adoption of such guidelines forward."

Dr Melanie MacKean,
 Consultant Oncologist, NHS Lothian

Each devolved health system has responded slightly differently to the challenges presented by the pandemic. Whilst the conversations with the lung cancer experts did not depict significant variation in how pathways were adapted across the devolved nations, a few key themes were noted:

helped ensure that they remained 'COVID-19 cold or light' sites. Due to limited diagnostic capacity, patient referrals for diagnostic investigations, such as radiology, were coordinated centrally during the pandemic to ensure that patients were sent to the centre with the shortest waiting times.⁵³

LEVEL OF SERVICE DISRUPTION



With lower initial COVID-19 peaks, Scotland, Wales and Northern Ireland did not experience the same level of impact on lung cancer services as England.⁵⁰ Interviewees from the devolved nations and the UKLCC's Clinical Advisory Group discussion suggested that the reduction in urgent referrals ranged from 40% in Wales to 50% in Northern Ireland and 70% in Scotland during the first wave of the pandemic.⁵¹ Due to the lower impact of COVID-19, some services such as lung cancer surgery, which was significantly reduced in England, were able to continue throughout the peak of the pandemic in Scotland and Wales.⁵²

LACK OF COORDINATED PATHWAYS



To improve lung cancer care and close the survival gap to other European countries, Wales introduced its **Single Cancer Pathway** guidelines in 2018 and its **National Optimal Pathway** for Lung Cancer in 2019. However, similar guidelines are currently lacking in Scotland which has made it more challenging to coordinate and agree the COVID-19 related changes to the pathway as well as reduce regional variation in lung cancer care.⁵⁴ This is compounded by lack of scrutiny, with Scotland and Northern Ireland sitting outside the National Lung Cancer Audit (NLCA) and limited pressure on lung cancer services to meet the 62-day performance target.

UK five-year lung cancer survival out of 29 European countries^{ix}

| | |
|------------------|------------------|
| Northern Ireland | 19 th |
| England | 26 th |
| Scotland | 27 th |
| Wales | 28 th |

CENTRAL COORDINATION



In Scotland, cancer care is provided via a number of large specialist cancer centres, making it easier to rapidly implement changes to the lung cancer pathway. The majority of these centres are also separate from acute care settings, which has

RECOMMENDATIONS



5

The lung cancer clinical community should work together to promote the coherent adoption and implementation of national optimal lung cancer guidelines across the UK to ensure people affected by lung cancer receive optimal care no matter where they live.

5. OPPORTUNITIES FOR INNOVATION EMERGING FROM THE HEALTH SYSTEM RESPONSE TO THE PANDEMIC

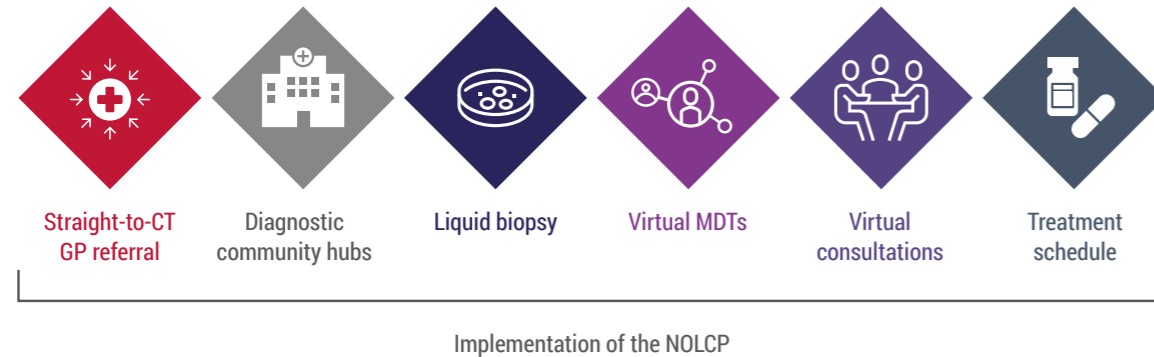


“National conversations and agreements are very welcome. The lung cancer community is quite collegiate but suddenly we became very collegiate, which is fantastic for getting things done – a positive message from COVID-19.”

Dr Melanie MacKean,
Consultant Oncologist, NHS Lothian

Despite the unprecedented challenges posed by COVID-19, the system's response to the pandemic has also seen an unprecedented level of collaboration and the acceleration of innovation, which if adopted longer term holds the potential for improving lung cancer care in the future:

Innovations accelerated during the pandemic



5.1 STRAIGHT-TO-CT GP REFERRAL



To accelerate the diagnostic pathway, the NOLCP recommends a 'straight to CT' triaging system through which radiologists can 'hot report' suspicious chest x-rays (CXR) for further CT investigation. With restricted access to CXR during the initial phase of the pandemic and the detailed insights provided by CXRs limited, the Taskforce for Lung Health recommended the adoption of a GP-led straight-to-CT referral if potential lung cancer is suspected.⁵⁵ In combination with the CEG's **Differentiating the Cs guidance**, introducing the change to the diagnostic pathway will not only reduce the pressure on CXR services due to the number of COVID-19 investigations but also accelerated the lung cancer diagnostic pathway by up to three days.

RECOMMENDATIONS



6

The Lung Cancer Clinical Expert Group should develop the evidence base to allow NICE to assess 'straight to CT' referral by GPs in order to support pathway changes in all four nations.

5.2 COMMUNITY DIAGNOSTIC HUBS



“I am a strong advocate of centralisation of diagnostic services including the utilisation of private sector resources when NHS resources are under huge pressure from COVID-19.”

Interview with Professor Sanjay Popat,
Chair, British Thoracic Oncology Group



To reduce potential patient exposure to the pandemic, COVID-19 'free / light' Community Diagnostic Hubs (CDH) were established to enable the delivery of diagnostic tests in the community, away from acute care setting.⁵⁶ This is an acceleration of the adoption of the Rapid Diagnostic Centres (RDCs) already recommended in the Long Term Plan.⁵⁷ However, the original RDCs did not have any allocated funding to support their wider roll-out. CDH accelerated during the initial phase of the pandemic to offer a single point of access to diagnostic tests. With the publication of Sir Mike Richards recommendation that CDH should be funded for all ICSs, the importance of CDHs is only likely to grow.⁵⁸

The diagnostic services include: CT, MRI, ultrasound, CXR, echocardiography, ECG and rhythm monitoring, spirometry and phlebotomy as well as endoscopy facilities.⁵⁹ Such diagnostic hubs not only have the potential to provide safer diagnostic appointments for patients during the COVID-19 endemic period but can further accelerate diagnostic turnaround times by bundling diagnostic tests and reducing the number of patient visits required to obtain the necessary test results ahead of the first MDT meeting.

In addition to CDH, Primary Care Diagnostic Hubs are under development at Primary Care Network (PCN) level for diagnosis of breathlessness using spirometry and Fractionated exhaled Nitric Oxide (FeNO) where asthma or COPD are the likely diagnosis but onward referral into CDH and discussion with appropriate specialists should be included in pathway development.⁶⁰

RECOMMENDATIONS



7

In England, Integrated Care Systems (ICSs) should be provided with the necessary funding to establish Community Diagnostic Hubs to reduce the risk of COVID-19 transmission and accelerate diagnostic turnaround time for lung cancer patients.

The devolved nations should explore the potential for delivering diagnostic services in more community settings.

5.3 LIQUID BIOPSY



“Liquid biopsy has a great potential to accelerate the molecular profiling of the tumour and provide a safer diagnostic method compared to fiberoptic bronchoscopy. However, it's not part of routine practice at the moment.”

Professor Denis Talbot,
Professor of Cancer Medicine, University of Oxford



Potential aerosol generating procedures such as bronchoscopy were drastically reduced during the pandemic due to high risk of virus transmission. This limited the ability of clinicians to obtain tissue samples from the suspected tumour to assess its staging and potential genetic mutation.⁶⁰ In response, alternative methods for the molecular profiling of tumour DNA have been advanced during the pandemic.

Liquid biopsy offers an alternative procedure through which circulating tumour DNA (ctDNA) is obtained via a simple blood sample. As a result, the genetic mutation of the tumour can be identified earlier, allowing the patients to receive targeted therapy more quickly.⁶¹ This is particularly important given that the 2020 National Lung Cancer Audit showed that only 75% of patients with confirmed EGFR mutation and 58% of patients with an ALK translocation received the approved first-line targeted therapies, with patients often starting chemotherapy as they cannot afford to wait for the molecular test results.⁶²



The 2020 National Lung Cancer Audit showed that only 75% of patients with confirmed EGFR mutation and 58% of patients with an ALK translocation received the approved first-line targeted therapies.

Recommendations from the UKLCC's January 2019 Molecules Matter report highlighted the importance of ensuring tissue quality, sample availability and efficient turnaround times for liquid biopsy. Recommendation 5 stated that individuals collecting tissue samples should be encouraged to ensure "sufficient material is obtained to maximise the ability of pathologists to make a correct and detailed diagnosis." Recommendation 12 stated standards should be set, and monitored, around the movement of samples to minimise turnaround time.⁶³

Whilst liquid biopsy should not be considered as a substitution of traditional biopsy procedures such as bronchoscopy, it can provide a safer option to support the profiling of the tumour and has the potential to accelerate the diagnostic pathway by up to two weeks.⁶⁴ However, despite these benefits liquid biopsy procedures are currently not funded by the NHS and trials were taken forward during the pandemic with the support of private providers.⁶⁵

The 2020/2021 National Genomic Test Directory for cancer has now been published,⁶⁶ confirming molecular testing non-small cell lung cancer using next-generation sequencing panel technology. Moving forward, this should be available for clinicians to order via the seven Genomics Laboratory.

RECOMMENDATIONS



8

The Lung Cancer Clinical Expert Group should work with the lung cancer clinical community across the UK to review the evidence base for the routine commissioning of liquid biopsy for patients with advanced disease with a high probability of an abnormal gene in their tumour.

5.4. VIRTUAL MULTI-DISCIPLINARY TEAMS



"Virtual MDTs are a game changer and great utilisation of time. Before specialists would travel up and down the country to attend MDTs. Now you just have to dial-in but we need the IT infrastructure to adequately support the new processes."

Professor Sanjay Popat,
Chair, British Thoracic Oncology Group



The initial phase of the pandemic saw the acceleration of the roll-out of virtual multi-disciplinary teams (MDTs) meetings. The adoption of these types of services have been considered within the NHS as a way of improving capacity for years, but the pandemic saw them implemented within weeks. Virtual MDTs offer the benefit of greater attendance across specialities, supporting the examination of complex cases. They also significantly reduce the time that specialists would normally spend travelling to attend these meetings, freeing up much needed capacity within the lung cancer workforce. It was noted that virtual decision-making could be further supported by ensuring high quality radiological imaging and advancing the adoption of digital pathology.⁶⁷ However, virtual MDTs can only run effectively if the necessary IT infrastructure is provided and members are fully trained in running and chairing these meeting effectively.

RECOMMENDATIONS



9

Every NHS Trust should be provided with the necessary IT infrastructure to enable specialists to contribute effectively to virtual meetings and ensure a high-quality discussion.

5.5. REMOTE CONSULTATIONS



The number of remote consultations has increased significantly over the months of lockdown to avoid patients needing to come into hospital. They can offer a safer and more convenient way for patients to speak to their treating specialist or clinical nurse specialist. However, the interviews highlighted a number of challenges that need to be addressed to ensure that virtual consultations are carried out in a way that benefits both patients and the supporting clinical team. These challenges include:

- Difficulties for the clinical team in examining the patient and picking up non-verbal cues such as performance status, as well as inability to speak to the patient's family members
- Conveying empathy when sharing difficult news and building the patient's trust in the clinical team
- Inability to take additional tests and samples to support research when the patient is coming in for their outpatient appointment
- Inability to take immediate action such as handing out a prescription or referral to a pain service as part of the hospital visit
- Unfamiliarity with the IT technology particularly amongst the older patient generation

To address the challenges, a tailored approach was recommended by which the patient is seen face-to-face for the initial consultation and followed up with a targeted consultation approach, tailored to the individual circumstances and preferences.

RECOMMENDATIONS



10

To unlock the opportunities offered by the adoption of the remote consultations, research should be undertaken across the lung cancer patient and clinical community to develop best practice guidance to support lung cancer services in optimising the use of remote consultations.

5.6 TREATMENT SCHEDULE



"We have been asking for some of the treatments for years and now we can access them. NHS England's changes to the treatment schedule are excellent and should be lauded"

Professor Sanjay Popat,
Chair, British Thoracic Oncology Group



The reduction in the use of chemotherapy due to its immunosuppressant and potential side effect profile has meant that some targeted treatments have moved forward in the treatment pathway. In addition, treatment delivery schedules were also amended by NICE and the SMC to recommend for some therapies to be administered less frequently.^{68,69} These changes have the potential to reduce the impact of cancer care on patients by minimising side effects and the need to travel to hospital. They also offer opportunities to free up NHS capacity, helping services address the backlog in treatment caused by the pandemic. The NHS should now be collecting real-world data on the impact of interim treatment regimens to assess the implications for patients' survival and quality of life to inform future treatment commissioning decision-making.

RECOMMENDATIONS



11

The NHS should work with the relevant national Health Technology Assessment bodies to assess the impact that the changes in treatment and delivery schedule have had on lung cancer patients to harness the potential improvements to patient survival outcomes as well as to their quality of life.

5.7. IMPORTANCE OF THE IMPLEMENTATION OF THE NOLCP



The foundation of many of these innovations has already been laid through the implementation of the NOLCP, including straight-to-CT hot reporting, diagnostic bundling and virtual MDTs. This has meant that the lung cancer care pathway was to some extent better prepared for the impact of the challenges created by the virus than other tumour types. It is important that the impact of COVID-19 does not divert the focus away from optimising the lung cancer care pathway. Implementing the NOLCP and fostering collaboration across the pathways to achieve optimal clinical care will ensure that services can recover from the initial wave more quickly and are better prepared for potential future pandemics.

GLOSSARY

| | | | |
|--------------|---|---------------|--|
| ALK | Anaplastic Lymphoma Kinase | NOLCP | National Optimal Lung Cancer Pathway |
| CDH | Community Diagnostic Hubs | OECD | Organisation for Economic Co-operation and Development |
| CEG | Clinical Expert Group | PCN | Primary Care Network |
| COPD | Chronic Obstructive Pulmonary Disease | PET-CT | Positron Emission Tomography – Computed Tomography |
| CRUK | Cancer Research UK | PPE | Personal Protective Equipment |
| CT | Computerised Tomography | RAPID | Rapid Access to Pulmonary Investigation Days – programme |
| ctDNA | circulating tumour DNA | RCR | Royal College of Radiologists |
| CXR | Chest X-Ray | RDCs | Rapid Diagnostic Centres |
| EBUS | Endobronchial Ultrasound | SABR | Stereotactic ablative radiotherapy |
| ECG | Electrocardiogram | SCLC | Small Cell Lung Cancer |
| ECLS | Early detection of Cancer of the Lung Scotland | SMC | Scottish Medicines Consortium |
| EGFR | Epidermal Growth Factor Receptor | UKLCC | United Kingdom Lung Cancer Coalition |
| FeNO | Fractionated exhaled Nitric Oxide | WTE | Whole Time Equivalent |
| GP | General Practitioner | | |
| ICS | Integrated Care Systems | | |
| LCNS | Lung Cancer Nurse Specialist | | |
| LCNUK | Lung Cancer Nursing UK | | |
| MDT | Multidisciplinary Team | | |
| MHRA | Medicines and Healthcare products Regulatory Agency | | |
| MRI | Magnetic Resonance Imaging | | |
| NICE | National Institute for Health and Care Excellence | | |
| NIHR | National Institute for Healthcare Research | | |
| NHS | National Health Service | | |
| NLCA | National Lung Cancer Audit | | |

ANNEX

Attendees of the UKLCC Clinical Advisory Group Meeting, Friday, 26 June 2020

- Professor Michael Peake OBE**, Clinical Director, Centre for Cancer Outcomes, North Central and East London Cancer Alliance; Emeritus Consultant and Honorary Professor of Respiratory Medicine; Honorary Clinical Lead National Cancer Registration and Analysis Service, Public Health England; Special Adviser, Cancer Research UK, outgoing UKLCC CAG Chair
- Richard Steyn**, Consultant Thoracic Surgeon and Deputy Medical Director, University Hospital of Birmingham NHS Foundation Trust; Honorary Associate Professor, University of Warwick; former Chair, UKLCC
- Dr Steve Holmes**, General Practitioner, The Park Medical Practice, Shepton Mallet, Somerset
- Dr Jeanette Dickson**, President, The Royal College of Radiologists
- Professor Keith Kerr**, Consultant Pathologist, Aberdeen Royal Infirmary
- Dr Robert Rintoul**, Reader in Thoracic Oncology, University of Cambridge, Honorary Consultant Respiratory Physician, Royal Papworth Hospital NHS Foundation Trust, incoming UKLCC CAG Chair
- Lavinia Magee**, Nurse Consultant, Thoracic Oncology, Royal Papworth Hospital NHS Foundation Trust, LCNLUK Committee member
- Dr Neal Navani**, University College Hospital, Respiratory Physician, National Lung Cancer Audit
- Dr Wendy Anderson**, Consultant Respiratory Physician, Antrim; Northern Ireland Lung Cancer Co-Lead
- Professor Alison Leary**, Chair of Healthcare & Workforce Modelling, London South Bank
- Professor Michael Lind**, Professor of Medical Oncology, University of Hull
- Dr Kevin Blyth**, Honorary Professor, Institute of Cancer Services, NRS Senior Research Fellow and Consultant Respiratory Physician, Glasgow
- Dr Daryl Freeman**, General Practitioner and Clinical Director, East of England Strategic Clinical Network
- Dr Nicholas Woznitza**, Consultant Radiographer and Clinical Academic, Homerton University Hospital Foundation Trust
- Lynsey Conway**, Communications Consultant, UKLCC
- Martin Grange**, lay representative, new UKLCC Chair
- Brian Knowles**, CRUK
- Karen Fitzgerald**, CRUK, ACE programme lead
- Veronique Poirier**, CRUK, ACE programme manager
- Oli Palmer**, CRUK ACE 3 programme
- Sandra Wakelin**, LCNLUK Committee member, Macmillan Lung Cancer Nurse Specialist
- Professor David Baldwin**, Honorary Professor of Respiratory Medicine Consultant Respiratory Physician University of Nottingham
- Dr Nick Sreaton**, Consultant Radiologist, Royal Papworth Hospital NHSFT, (written statement only)
- Andrew Wilcock**, Clinical Reader in Palliative Medicine and Medical Oncology, Nottingham City Hospital (written statement only)

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